RESEARCH

A REPORT OF THE
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High School
Vocational Education

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SUMMARY

The study examines the literature on high school vocational education emphasizing information on post high school outcomes, problems that may affect the outcomes, and the policy implications arising from the research.

The evidence examined indicated that the initial advantages of a vocational program (lower unemployment, a training related job, higher salaries) diminished over the longer term (three or more years after graduation).

No evidence was found to support increasing vocational education as a solution to youth unemployment.

The study found that vocational education is itself diverse, both in scope of programming and range, and expectations of its clientele.

Problems in translating the existing literature into policy recommendations included the lack of knowledge concerning the school to work transition, and the interrelationship of the overall economy and vocational education.

From the review of the literature it was concluded that some basic questions had to be answered before adequate policy can be developed. These questions are:

1. For whom is vocational education appropriate?

2. Towards what should vocational education be directed?

3. How does the school to work transition work; and how can education influence it, if at all?

4. What is the impact of current institutional rigidities?

RÉSUMÉ

Cette étude examine tout ce qui a été écrit sur la formation professionnelle au secondaire et particulièrement sur les résultats, les problèmes qui peuvent influencer ces résultats et les répercussions de cette analyse au niveau de l'établissement d'une politique.

À la lumière de ce qui a été examiné, il ressort que les principaux avantages de la formation professionnelle (diminution du chômage, métier spécialisé, salaires plus élevés) deviennent moins évidents à long terme (c'est-à-dire trois ans et plus après la fin des études).

Rien ne prouve non plus qu'en étendant les programmes de formation professionnelle, on va résoudre le problème du chômage des jeunes.

L'étude révèle en outre que la formation professionnelle est en elle-même suffisamment diversifiée, aussi bien sur le plan de la variété des programmes offerts que des attentes de sa clientèle.

Lorsqu'il s'agit de faire passer toute cette documentation au sein de recommandations en vue d'adopter une politique efficace, on se heurte à un manque de compréhension qui se fait sentir dans le passage du milieu scolaire au milieu de travail et l'interdépendance qui existe entre la situation économique en général et la formation professionnelle.

À la lumière de cette étude, on en a conclu qu'il fallait d'abord répondre à certaines questions fondamentales avant de pouvoir élaborer une politique adéquate, c'est-à-dire :

1. À qui s'adresse exactement les programmes de formation professionnelle ?

2. Quelle direction devrait prendre la formation professionnelle ?

3. Comment se fait le passage de l'école au travail ? Quel y est le rôle de la formation professionnelle, si elle a un rôle à jouer ?

4. Dans quelle mesure la rigidité actuelle des institutions influence-t-elle la formation professionnelle ?

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Over the past twenty years, interest in the provision of vocational education has been building in Canadian education. Generally, interest has peaked during times of high unemployment among youth. Many policymakers view increasing the amount of vocational education as a solution to youth unemployment. Thus, it is timely to examine the efficacy of vocational education in enhancing the employability of youth. The paper will examine evidence on the outcomes of vocational education, problems encountered by the researchers, and the policy implications arising from the research. Although the majority of studies examined are large U.S. research projects, some Canadian studies have been examined as well.

I. WHAT HIGH SCHOOL VOCATIONAL EDUCATION PROMISES

Supporters of vocational education have justified the program on its provision of the skills and attitudes necessary for a successful career (Mertens, 1983). An examination of the claim indicates that the vocational education program should provide not only entry into the labour force and success in obtaining a job, but also the requisite skills to continue the processes (learning) necessary for career advancement. Inherent in this statement is the claim that the vocational education program is superior to a more general, less focused form of educational program. The preceeding suggests that the degree of relationship between the program and subsequent employment, the level of unemployment of vocational graduates when compared with graduates of general education programs, earnings, and satisfaction are suitable measures for assessing the effectiveness of vocational education.

II. WHAT HIGH SCHOOL VOCATIONAL EDUCATION DELIVERS

1. The Short Term

When the evidence from a number of the studies over the short term (one year after graduation) is reviewed, a relatively consistent pattern is noted. First, students are generally employed in a training-related job. For graduates having 10 or more vocational credits, it was reported in a Manitoba study that 67% of the business education students and 44% of the vocational-industrial graduates were in a training-related job (Haughey and Weeda, 1981). Secondly, students tended, on average, to be satisfied with their program of studies. Approximately 87% of the respondents indicated that their vocational education program

was "adequate" or "very adequate." A similar study conducted by Alberta Education saw 93.6% of vocational program completers report that the program was "adequate" or "very adequate" (Collett, 1978). Thirdly, the unemployment rates for completers of vocational education tend to be lower than those for the general population in the same age group. However, it is important to note that in a number of the studies, both business education and industrial education programs have been aggregated. When the data are examined more carefully, generally a higher proportion of business-related program graduates are employed in a training-related job than those who graduated from an industrial-related vocational program. As well, the business education graduates appear to experience more favourable occupational status (SES) although usually lower salaries when compared with their non-vocational or industrial-vocational counterparts.

2. The Longer Term

The evidence gained from a number of studies that examined the outcomes more than one year beyond graduation appears to be less consistent. While the Alberta study attributes lower levels of unemployment and consistently higher paying jobs to vocational education, a number of other studies describe smaller and non-significant differences between vocational graduates and graduates of other programs. The Alberta study reported earnings in excess of $12,000 five years after graduation for 53% of vocational graduates, 32% of matriculation graduates, 30% of general graduates and 14% of business graduates (Collett, 1978). Also, five years after graduation unemployment rates for the graduates were approximately zero, 7%, 11%, and approximately zero respectively (Collett, 1978). When considering the numbers of graduates enrolled in further training in the Alberta study, it was found that the percentages of graduates from the vocational program enrolled in apprenticeship or technical programs was slightly higher (44.7%) than the percentages of graduates from matriculation enrolled in university (41.5%).

The data from the High School Class of 1972 (Fleming et al, 1980) and the Parnes survey were analyzed for the time period to correspond with four years after graduation. The analysis showed significant positive program effects for women who had completed business education, and

slight positive and slight negative effects (Fleming et al, 1980) for males in vocational industrial programs (power mechanics, machining, etc.) (Gustman and Steinmeier, 1982). The studies have found that males graduating from marketing and trade and industry programs had positive outcomes that could be attributed to the program. However, it must be noted that many of these had supplemented their high school vocational education with apprenticeship and employer-sponsored training. This appears to be consistent with the Alberta study. Furthermore, the studies attributed positive effects to the program for women in trade and industry and business-related programs. Women also tended to continue their education by completing apprenticeship programs and employer-sponsored training. Both males and females who had completed secondary vocational programs in agriculture or home economics did less well than their non-vocational counterparts (Mertens et al, 1980). On the other hand, another analysis reported no evidence to support the association of high school vocational training and later earnings for males (Meyer and Wise, 1982). The analysis by Mertens concludes with the observation that "vocational education is good for some of the people some of the time" (females graduating from business education) and that "post-secondary training makes it better for some of the people some of the time" (males in marketing).

III. PROBLEMS IDENTIFIED IN THE RESEARCH

Over the range of studies conducted with respect to the outcomes of high school voational programs, a number of problems at a conceptual level emerge.

The current lack of knowledge concerning the inter-relationship and causal patterns of vocational education and labour market outcomes is an issue (Gustman and Steinmaier, 1982). The lack of a standard model of the school to work transition and the absence of behavioural analysis of the relationship are seen as the crux of the issue. Three possibilities of how the relationship functions have been postulated. One is that high school vocational training is a substitute for training that would normally be provided on the job. Another is that the provision of vocational training is, to some degree, a substitute for training in basic skills. A third is that vocational training provides information about the world of work and thus tends to reduce the friction present in the school to work transition. However, none of the models has been confirmed by data.

A number of the studies appear to ignore the context of the new vocational graduate and the economy from the time of graduation until the graduates have had the opportunity to establish themselves in the workforce. Outcomes are therefore attributed to programs when they may in fact be a result of broader economic conditions. For example, a recent study (Abraham, 1983) found that the ratio between unemployed persons and available jobs has risen from 2.5:1 in the early 1960's to approximately 5:1 in the late 70's. As well, although the majority of authors credit post-graduation success to the additional years of schooling, little analysis has been done regarding the degree to which the vocational programs have succeeded in retaining students who would otherwise have dropped out. In fact, few studies have addressed the vocational dropout and his/her success as compared with others.

Although vocational programs strive to provide individuals with entry level job skills, little information exists about actual job requirements as compared with articulated requirements from employers. For example, when the study of the pilot vocational computer programming program in Manitoba was conducted, co-operating employers differed greatly from the industry advisory committee for the course in their opinion of the requirements for a suitable graduate. (Haughey and Weeda, 1981).

1. What is High School Vocational Education?

The definition of vocational education varies from province to province in Canada and from state to state in the United States. In fact, one of the problems associated with measuring vocational education outcomes is the lack of a consistent definition about what constitutes a program. For example, in a recent Manitoba Study (Haughey and Weeda, 1981) the sample consisted of students who had completed six or more credits in a vocational program. However the curriculum in Manitoba requires ten vocational credits for designation of a student as a vocational graduate.

According to Lewis (1980), the four major studies conducted on vocational education in the United States relied upon the students' own perceptions of the program they had studied in high school. Further data were collected from students participating in the High School Class of 1972 which demonstrated that one third of the

students who had reported they had completed a vocational program were classified by their schools as general or academic (Lewis, 1980). Also, in much of the analysis of outcomes, vocational education has been considered homogeneous, but much of the evidence indicates differences among program specialties; business education versus home economics for women, and industrial and trades versus agriculture for men (Haney and Woods, 1981).

2. Who Takes High School Vocational Education?

Few studies have collected a wide enough information base to determine if the outcomes can be attributed solely to the program. While a number of the U.S. studies have collected information on sex, racial group, and socio-economic status few have collected information on a comparable group of non-vocational students while controlling for variables measuring academic performance. In the longitudinal study conducted by Alberta Education (Collett, 1978), it was found that students in the four major high school programs (business, vocational, matriculation, and general) had different ability levels, with business education students lowest on average and matriculation students highest.

In Manitoba, a number of school division officials indicated that only students who were not likely to complete a conventional high school program were encouraged to enroll in the co-operative vocational education program (Chapman and Haughey, 1982). In the United States, vocational education is often seen as an alternative for students who are minorities, disadvantaged, or handicapped (Weisberg, 1983). Data from the High School Class of 1972, demonstrate that academic students were higher in measured academic ability than both vocational and and general students (Fleming et al, 1980). Fleming, et al conclude, based on the High School Class of 1972 that "the SES level of academic students was appreciably higher than that of general students who had, in turn, a slightly higher SES level than that of vocational-technical students." Furthermore, data from the United States show that minority students make up a higher percentage of the clientele of vocational education programs than the general population (24% for vocational education compared with 20% in the population) (Bottoms and Copa, 1983).

The same study reported that 400,000 vocational education students had handicaps. Perhaps vocational education should be considered a type of compensatory program given the number of its clientele who would qualify for such programming.

The response rate in follow-up surveys also varies considerably. The Manitoba study achieved an overall response rate of 57%, while the Alberta study achieved 50% on the first follow-up (one year after graduation), and 27% on the second follow-up (5 years after graduation). When participants and non-participants in the High School Class of 1972 were compared, a number of differences were noted (Fleming et al, 1980). The evidence indicates that non-respondents are significantly different than respondents which suggests that a low response rate (less than 70%) may produce unreliable data.

IV. DISCUSSION

It appears clear from the preceding that the state of the art of measuring the outcomes from vocational education does not allow precise determination of the additional benefits to vocational graduates over and above those that would result from a general or academic education program.

Much of the vagueness apparent in the results of the major studies is due to the imprecision in the definition of a vocational program; what the intended relationship of the vocational program to the labour market is; and, what in fact are those skills both of a general and a specific vocational nature required for job entry and advancement.

As well, a number of the conclusions drawn on the "success" of vocational education have been made on gross measures rather than on a program by program basis. If, in fact, some individual programs exhibit large positive differences in employment benefits, while others have negative results a bland overall conclusion would result. However, one must bear in mind that the outcomes of a given specific program might be coloured by a number of intervening factors that occur at the time of the study, such as the level of economic activity.

Additionally, two matters require further study. The first is the differences inherent in the clients of the various programs (vocational, general and matriculation) and the second is the expectations held for the program.

V. POLICY ISSUES

The findings of the studies examined do not provide support for utilizing vocational education to reduce unemployment among youth. In fact, there is no clear evidence that indicates vocational education graduates surpass graduates of other educational programs in obtaining jobs. However, the studies did raise issues that are relevant to forming policy regarding vocational education. The clarification of these issues is a necessary part of assessing the current policy on vocational education.

1. What is an Appropriate Clientele?

There is, first of all, the problem of a varied clientele in vocational education. The data demonstrate that students enrolled in vocational programs come from a variety of academic backgrounds (although primarily from average and lower ability groups). As well, students select vocational programs for a variety of reasons. Some students are referred to vocational education because of poor academic performance while others choose vocational choose vocational programs as an alternate to an academic or general program. Some select vocational programs to explore career options while others elect vocational programs to pursue interests. Yet others enroll in vocational programs for the specific job training aspect. It may be difficult for any program to accommodate such diverse needs effectively.

2. What Should Vocational Education Do?

Vocational education itself, by design, exhibits some ambiguity. On the one hand educators see vocational education as an alternate means for a student to complete high school and obtain a general education while on the other hand it is seen and sold on the basis of the specific skill training and promise of eased entry into the world of work. The curriculum in Manitoba is a good example of the dichotomy in that ten academic credits are required for graduation from a vocational program. Again, variance in objectives makes it difficult to demonstrate results.

Although discussion has focused on vocational education it must be remembered that vocational education comprises programs ranging from business education to building construction. The latter

program, building construction, depending on the location could involve bricklaying, carpentry, cabinet making, masonry, painting, plumbing, and trowel trades either individually or in some combination. Thus it is important to realize that when vocational education is discussed, there is considerable variation in the degree of specialization and sophistication involved in the various programs and their options. Vocational education is extremely diverse.

3. What is the School to Work Transition?

Another issue that must be resolved before clear policy directions can be developed is the relationship and the processes and factors influencing the transition from school to work. Coupled with this lack of understanding is the poor record in predicting future specific labour force requirements. Given the difficulty involved in correctly matching the area of training with the future job market, difficulties arise if vocational education is to be part of the overall job training strategy. As a consequence, policy makers may have to choose a more general form of training over more specific forms as long as the forecasts continue to miss the mark.

4. Existing Institutional Rigidities

Another consideration for policy makers involved in planning vocational education is the inflexibility in the present delivery system. Because the province delivers secondary vocational education through legally autonomous school division a number of lags occur between the time policy is formulated and subsequently implemented. In addition to the lags, school divisions also face problems related to staffing and capital facilities. One can not transform a power mechanics instructor and the related shop to deliver a program in electronics overnight. Similarly, sufficient lead time is required to design and construct facilities and hire staff to deliver a program in an emerging area. Currently, vocational facilities are approved for vocational (50%) programs, which may prohibit a school from responding to a demand for a more limited (1 or 2 course) offering in the area.

Clearly, these issues must be resolved in order to set the framework for the redevelopment of policy with respect to vocational education.

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